

### Remarks

Reconsideration of this application is respectfully requested. Claims 6-9, 23-25, and 30-33 remain in the application. No claims have been amended, added, or canceled.

### Rejections under 35 U.S.C. 112

Applicant's claims 6-9, 23-25, and 30-33 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicant respectfully submits that claims 6-9, 23-25, and 30-33 satisfy the written description requirement. In particular, Applicant claims a first routing table comprising interior gateway protocol (IGP) forwarding entries for a first virtual private network (VPN) and a second routing table comprising IGP forwarding entries for a second VPN. Applicant respectfully submits that these claims are supported in Figure 2A and paragraph 31, which discloses VPN context 109A having IGP table 207I and VPN context 109B having IGP table 207J. Accordingly, Applicant respectfully requests the removal of the first paragraph 112 rejections.

### Rejections under 35 U.S.C. 103(a)

Applicant's claims 6-9, 23-25, and 30-33 have been rejected under 103(a) as being rendered obvious by Rekhtar, et al., US Patent No. 6,339,595 in view of Alfieri et al., U.S. Patent No. 7,039,720 and Jagannath et al., U.S. Patent No. 7,095,740. Applicant does not admit that either Alfieri or Jagannath is prior art and reserves the right to swear behind either reference at a later date. Nonetheless, Applicant respectfully submits the combination does not disclose each and every element of the invention as claimed in claims 6-9, 23-25, and 30-33.

Rekhtar discloses creating multiple virtual private networks (VPNs) using edge and transit routers (Rekhtar, Abstract). A VPN is private wide-area network is a private network connecting remote customers network over a service provider's core network (Rekhtar, Fig. 1, col. 6, lines 17-25). Each edge router couples to one or more customer networks to act as the ingress or egress points with the customer's remote networks (Rekhtar, col. 2, lines 63-65). The transit routers forward the customer's VPN traffic within the service provider's core network (Rekhtar, col. 2, line 66- col. 3, line 7).

The edge router identifies incoming traffic as belonging to a particular customer's VPN, tags the incoming traffic, and forwards the tagged traffic to the next hop transit router (Rekhtar, col. 2, lines 63-65). In one embodiment, each edge router has a separate forwarding information base (FIB) for each supported VPN, but has only a general FIB for all other non-VPN forwarding decisions (Rekhtar, col. 9, lines 27-35). In another embodiment, Rekhtar discloses that the edge router has a "common table containing VPN-identified entries" in instead of separate FIB tables for each VPN (Rekhtar, col. 33, lines 36-41). In particular, Rekhtar discloses "... although we have described VPN-specific information being stored in separate tables because the approach seems most convenient, there is no reason in principle why a common table containing VPN-identifying entries could not be used instead." (Rekhtar, col. 36, lines 36-41, emphasis added). Because Rekhtar used the word "instead", Rekhtar discloses that a single common VPN table approach is a replacement for the separate table per VPN approach. Nonetheless, Rekhtar does not teach or suggest a hybrid of the two approaches.

Rekhtar's tag information base (TIB) contains next-hop information, tags, and tag-stack operations (Rekhtar, col. 10, lines 46-49). The tag is an index to a given router's routing table (Rekhtar, col. 9, lines 51-55). TIBs are modified using tag distribution protocols (Rekhtar, col. 11, lines 10-17).

Thus, Rekhtar discloses VPN related routing information as (1) either a separate FIB table for each VPN or a common FIB table for all the VPNs; and (2) stored in a TIB. Nevertheless, Rekhtar does not disclose maintaining some VPN forwarding information in a common VPN Exterior Gateway Protocol (EGP) forwarding table *and* VPN Interior Gateway Protocol (IGP) forwarding information in separate tables for each VPN.

Alfieri discloses a dense virtual router packet switching system that divides the memory area into different context areas for a set of virtual private networks (Alfieri, Abstract). Each context area has one routing table for one VPN (Alfieri, Col. 5, lines 33-35; and also Col. 3, lines 49-51). Alfieri further discloses one routing process for each routing protocol that are time-shared to handle routing requests for multiple VPNs (Alfieri, Fig. 5, Col. 5, lines 28-36). Each routing process connects to the VPN context and uses the one routing table of the VPN context through context selection logic (Alfieri, Fig. 5, Col. 5, lines 52-58). Thus, Alfieri discloses each VPN context having its own routing table.

Jagannath discloses implementing VPNs using multi protocol label switching (MPLS) by placing the VPN identification (VPN-ID) in the MPLS label field (Jagannath, Col. 3, lines 8-13). In addition, the MPLS label is also placed in the MPLS label field (Jagannath, Col. 3, lines 8-13). Jagannath further discloses a router building a common MPLS table from separate VPN routing tables (Jagannath, Col. 3, lines 21-26; Col. 4, lines 15-26). Forwarding of packets is performed by looking up the VPN-ID/MPLS label in the MPLS forwarding table (*Id.*). Alternatively, the packet VPN-ID identifies the a separate MPLS forwarding table used to forward the packet (Jagannath, Col. 3, lines 13-18; Col. 4, lines 7-14).

Applicant respectfully submits that the combination of Rekhtar, Alfieri, and Jagannath does not teach or suggest Applicant's claims. Rekhtar discloses VPN related routing information as (1) either a separate FIB table for each VPN or a common FIB table for all the VPNs; and (2) stored in a TIB. Alfieri discloses each context VPN having its own routing table. Jagannath discloses a separate MPLS forwarding table for each VPN or a common MPLS table for all the VPNs. Nevertheless, none of Rekhtar, Alfieri, or Jagannath discloses maintaining Exterior Gateway Protocol (EGP) VPN forwarding information in a common EGP forwarding table *and* VPN Interior Gateway Protocol (IGP) forwarding information in separate tables for each VPN.

For example, claims 6, 23, and 30 require "maintaining a first set of information for a first layer 3 VPN (virtual private network), the first set of information for including a first value identifying the first layer 3 virtual private network separately maintaining a second set of information for a second layer 3 virtual private network the second set of information for including a second value identifying the second layer 3 virtual private network, wherein the first and second sets of information corresponds to a first and second customers accessing a backbone and maintained within a single network element of the backbone, and wherein the first and second sets of information include sufficient information to establish the first and second layer 3 virtual private networks VPNs with other network elements of the backbone for the first and second customer respectively; associating the first value with a first route distinguisher; associating the second value with a second route distinguisher; ... maintaining on a single network element a single exterior gateway protocol (EGP) table for the first and second layer 3 VPNs, wherein the single EGP table comprises EGP

forwarding entries for the first and second layer 3 VPNs; maintaining on the single network element a VPN-specific first routing table for the first layer 3 VPN, wherein the first routing table comprises interior gateway protocol (IGP) forwarding entries for the first layer 3 VPN; and maintaining on the single network element a VPN-specific second routing table for the second layer 3 VPN, wherein the second routing table comprises IGP forwarding entries for the second layer 3 VPN."

The above quoted limitations are not described or suggested by Rekhtar. While there are various uses for the invention as claimed, several such uses are discussed in Figure 2A and paragraphs 31 and 38 - 42. Thus, while the invention is not limited to the uses discussed in these paragraphs, it should be understood that Rekhtar does not enable these uses and the above quoted limitations do.

For at least these reasons, Applicant respectfully submits that the independent claims are allowable. The Applicant respectfully submits that the dependant claims are allowable for at least the reason that they are dependent on an allowable independent claim.

### *Conclusion*

Applicant respectfully submits that the rejections have been overcome by the amendments and remarks, and that the Claims as amended are now in condition for allowance. Accordingly, Applicant respectfully requests the rejections be withdrawn and the Claims as amended be allowed.

*Invitation for a telephone interview*

The Examiner is invited to call the undersigned at 408-720-8300 if there remains any issue with allowance of this case.

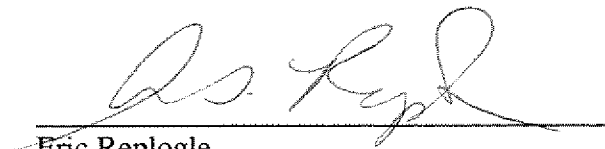
*Charge our Deposit Account*

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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